How to get involved and voice your opinion:

Meet and talk to Commission members.

Attend Commission meetings; contact the Delaware Nutrient Management Program for dates and locations.

NUTRIENT MANAGEMENT PROGRAM

(302) 698-4500 or
1-800-282 -8685

Bill Rohrer
Program Administrator

Steve Hollenbeck
Env. Coordinator

Darlene Phillips
Administrative Specialist II

MANURE LINKS

(800) 411-6618

WEBSITE

www.state.de.us/deptagri

Upcoming DNMC meetings

- October 8th, 7pm
- November 12th, 7pm
- December 10th, 7pm

All meetings are held at the Department of Agriculture Conference Room unless otherwise noted.

Doc. # 65 01 12 01 06 17

Vol. III, No. 1
Summer 2002

Valuable Nutrient Management Contact Resource

DNMC COMMISSIONERS

William Vanderwende (Chairman)	(302) 349-4423	Sussex County Dairy Producer
David Baker	(302) 378-3750	New Castle County Grain Industry
Stephen Corazza	(302) 653-3583	New Castle County Poultry Producer
James Elliott	(302) 539-3409	Sussex County Public Citizen
Carlton Fifer	(302) 697-2141	Kent County Vegetable Producer
John Hughes	(302) 739-4411	Director, Div. of Soil & Water Conservation, DNREC
Tony Keen	(302) 684-3196	Nutrient Consultant
Connie Larimore	(302) 398-8304	Kent County Poultry Producer
Ed Lewandowski	(302) 645-7325	Environmental Advocacy Group
Dale Ockels	(302) 684-0456	Sussex County Swine Producer
Brian Schilling	(302) 934-7684	Commercial Applicator
Carl Solberg	(302) 492-1225	Environmental Advocacy Group
Richard Sterling	(302) 653-7060	Commercial Nursery Industry
Charles “Chip” West II	(302) 238-0137	Sussex County Poultry Producer
Michael T. Scuse (Ex-Officio)	(302) 698-4500	Secretary, Department of Agriculture
Vincent Meconi (Ex-Officio)	(302) 577-4502	Secretary, Department of Health and Social Services
William Rohrer (Ex-Officio)	(302) 698-4500	Program Administrator

UNIVERSITY OF DELAWARE EXTENSION OFFICES

New Castle County Extension Office	(302) 831-2667
• Dr. Greg Binford (Nutrient Specialist)	(302) 831-2146
• Carl Davis (Extension Agent)	(302) 831-2506
Kent County Extension Office	(302) 730-4000
• Gordon Johnson (Extension Agent)	
Sussex County Extension Office	(302) 856-7303
• Dr. David Hansen (Nutrient Specialist)	
• Sydney Young (Extension Associate)	
• Derby Walker (Extension Agent)	
• Bud Malone (Poultry Specialist)	
Nutrient Management Class Schedule	www.rec.udel.edu

CONSERVATION DISTRICTS

New Castle County	(302) 832-3100
Kent County	(302) 697-2600 x.3
Sussex County	(302) 856-3990

DELAWARE
Nutrient Management Program
2320 South DuPont Hwy
Dover, DE 19901

DELAWARE
Nutrient Management Notes

Vol. III, No. 1 Summer 2002

Defining “High” P Soils in Delaware

Prepared by the Nutrient Management Commission,
Greg Binford and Dave Hansen, U of D Cooperative Extension

Phosphorus (P) is an essential nutrient for optimum plant growth, but this nutrient has received increased attention recently due to water quality concerns. This attention has been sparked by the accumulation of P in many Delaware soils to levels well above those needed for optimum crop growth. There is evidence to suggest that when soil P levels increase, there is increased risk of this P leaving the field and getting into local water supplies. High levels of P in our water supplies can lead to biological and ecological problems.

Delaware passed a law in June of 1999, called the Delaware Nutrient Management Act, which requires most individuals who raise crops or livestock or who apply nutrients to land to become nutrient management certified. This law also requires individuals who apply nutrients to land to develop a nutrient management plan. A critical step in the development of a Delaware nutrient management plan is determining if there are any fields that have soils “high” in P. The Delaware law states that anyone who has “high” P soils can apply no more than a three-year crop removal rate of P during a three-year period. This statement is critical to any producer who usually applies animal manures at rates needed to meet the nitrogen (N) requirements of the crop. A common example in Delaware would be applying poultry litter to meet the N demands of a corn crop. When poultry litter is applied to meet the N demands of corn, the amount of P that is being applied is typically about three to four times more than the crop will need. This restriction of applying only a three-year crop removal rate on “high” P soils should have no impact on producers who use fertilizer to meet the P demands of their crops, because these producers would not typically apply more fertilizer P than required to meet the P demands of the crop.

This brings us to the question of what is considered a “high” P soil in the state of Delaware. The Delaware Nutrient Management Commission (DNMC) recently defined a high P soil as any soil with a soil test value greater than 150 FIV. An FIV value of 150 is equivalent to a Mehlich 3 soil test value of 150 ppm P or 300 lb P/acre, a Bray P1 soil test value of 120 ppm P or 240 lb P/acre, or a Mehlich 1 soil test value of 75 ppm P or 150 lb P/acre. For a detailed discussion of converting between soil test values for Delaware soils, please see “Interpreting Soil Phosphorus Tests”, Dept of Plant & Soil Science, University of Delaware, Soil Testing Program, NM-04.

The DNMC has also adopted the P Site Index as a best management practice. The P Site Index is a tool that can be used determine the relative risk of P loss from soils to water. The P Site Index has been designed as a tool to evaluate many factors that can influence the potential loss of P from soils other than just the amount of P that is present in the soil (i.e., the soil test value). The P Site Index takes into account the erosion potential of the soil, the drainage characteristics of the soil, the methods used for managing P applications to a soil, as well as many other factors. For a detailed description on how to determine the P Site Index for fields in Delaware, please see

CONTENTS

Understanding Crop Removal Rates 2

Mandatory Nutrient Management Begins 2

Manure Links Up and Running 3

Booklet Available for Delaware Farmers 3

Nutrient Management Contact Resource 4

Understanding Three-Year Crop Removal Rates

Corn typically contains about 0.4 lb of P2O5 per bushel of grain, which means a 150 bu/acre corn crop would remove about 60 lb of P2O5 per acre. Soybean typically contains about 1.0 lb of P2O5 per bushel of grain, which means a 50 bu/acre soybean crop would remove about 50 lb of P2O5 per acre. While wheat typically contains about 0.5 lb of P2O5 per bushel of grain, which means an 80 bu/acre wheat crop would remove about 40 lb of P2O5 per acre.

Let's estimate the amount of P removed from a soil with the following three-year rotation: in year one we grow a 130 bu/acre corn crop, in year two we grow an 85 bu/acre wheat crop followed by a 35 bu/acre soybean crop, and in year three we grow a 50 bu/acre full-season soybean crop. Year one would remove about 52 lb of P2O5 per acre (130 * 0.4), year number two would remove about 43 lb of P2O5 per acre in the wheat (85 * 0.5) and 35 lb of P2O5 per acre in the soybean (35 *1) for a total of 78 lb of P2O5 per acre, and year number three would remove about 50 lb of P2O5 per acre (50*1). Therefore, during the three-year crop cycle about 180 lb of P2O5 per acre would be removed from this field.

"The Phosphorus Site Index: A Phosphorus Management Strategy for Delaware's Agricultural Soils", Dept of Plant & Soil Science, University of Delaware, Soil Testing Program, ST-05.

Because the DNMC has adopted the P Site Index as a best management practice, crop producers will have two choices for P management on soils with a soil test value greater than 150 FIV. The first choice would be to simply apply a three-year crop removal rate of P to the field. The other choice is to determine the P Site Index for the field and then use the P management strategy recommended by the P Site Index. It is possible that a field could have a soil test P level greater than 150 FIV but have a P Site Index rating that shows low risk of P loss from the soil. Given this situation, the crop producer would be allowed to apply manure at an N crop removal rate, instead of the P crop removal rate.

Given this previous example, if this field had a soil test P value greater than 150 FIV then no more than a total of 180 lb of P2O5 per acre could be applied to this field during the three-year crop cycle. Poultry litter typically contains about 70 lb of P2O5 per ton, which means that a maximum of 2.6 tons of "typical" poultry litter could be applied to this field during this three-year crop cycle. As stated earlier, it would also be possible to determine the P site index value for this field. If the P Site Index showed a low risk of P loss from the field, then it would be possible to apply a greater quantity of poultry litter rate to this field because an N removal rate could be applied instead of the P removal rate. If the P Site Index showed a high risk of P loss from the field, then the P removal rate of 180 lb of P2O5 per acre (as determined in this example) would be the maximum amount allowed during the three-year crop cycle.

Mandatory Nutrient Management Process Begins

The Delaware Nutrient Management Commission sent notified to over 1,400 property owners that nutrient management requirements must be implemented for nutrient receiving property(s) starting January 1, 2003.

Nutrient Management will help maintain and improve the quality of Delaware's ground and surface waters in the interest of the overall public welfare. Many volunteers from the agricultural and non-agricultural industry have met regulatory requirements early. Water quality is everyone's responsibility and proper nutrient management will soon be mandatory for some farmers, golf courses, and other property receiving nutrients.

Mandatory nutrient management is staggered in 20% segments starting 2003 and completed in 2007. Requirements include:

A nutrient management plan if you meet either of the following criteria:

- Manage 8,000 pounds of live animal weight (eight animal units).
- Manage more than 10 acres of land that receive organic (manure) or inorganic (chemical) fertilizers.

People impacted by the law must:

- Develop a nutrient management plan on all nutrient-receiving land owned/leased/or otherwise controlled by their operation.
- Develop an animal waste management plan for manure generated by livestock – animals.
- Maintain records for all manure and commercial fertilizer handled within their operation.
- Submit an annual report to the Nutrient Management Program.
- Become certified by January 1, 2004.

Delaware Manure Links Up and Running

The Delaware Nutrient Management Program is now offering a matching service to Delaware farmers, who have manure issues, and to alternative manure users, such as composters. The Delaware Manure Links database will match farmers with excess manure to farmers, who can safely use manure for land application, and to alternative users. Additionally, Manure Links is also available for use by manure brokers or transporters that intend to move manure from "sending farms" to either "receiving farms" or to alternative manure users.
Information collected by Manure Links will be posted on the Nutrient Management website:

http://www.state.de.us/deptagri/nutrients/index.htm

The goal of the Delaware Manure links and the Nutrient Relocation Program is to protect water quality by fostering the efficient utilization of manure.

To register with Delaware Manure Links, call (800) 411-6618. The Nutrient Management Relocation Application is available on the website. The application should be submitted for approval prior to moving manure in order to qualify for available cost share funds. For convenience, a Claim for Payment is also available on the website. Applications and Claims for Payment should be mailed to: The Delaware Nutrient Management Program, 2320 S. DuPont Highway, Dover, DE 19901.

Booklet Available for Delaware Farmers

Nutrient Best Management Practices

The Delaware Nutrient Management Commission is currently distributing Nutrient Best Management Practices booklets that provide a list and description of fifty-three different best management practices (BMPs). The BMPs help protect the environment and maintain profitable agriculture. Please contact one of the following offices to receive a copy:

Delaware Nutrient Management
(302) 698-4500
New Castle Conservation District
(302) 832-3100
Kent Conservation District
(302) 730-4000
Sussex Conservation District
(302) 856-3990

The booklet is also available online at:

www.state.de.us/deptagri/nutrients/index.htm

Upcoming Certification Classes

Nutrient Consultant Module:
October 15, 2002
(302) 856-2585 x.305

Session I for Ag and Non-Ag:
Scheduled Nov.-Jan.
Visit: www.rec.udel.edu for dates